

FULL PAPERS

From whaling to whale watching: a history of cetaceans in Scotland

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INTRODUCTION

Historic Utilization of Cetaceans

Scotland has over a thousand-year history of marine mammal exploitation dating back to the Stone Age. For example, cetacean bone was used as a building material in the wood-impooverished Orkney Islands; whale mandibles were used as rafters and in walls at the Neolithic site at Skara Brae in Orkney (Childe 1931). Sperm whale and bottlenose whale specimens were found at a Bronze Age site and sperm whale, minke whale, bottlenose whale and bottlenose dolphin artifacts have been found at a variety of Iron Age sites in South Uist (Mulville 2002). There is little evidence to suggest that these whales were butchered for food, but rather their bones used as building materials, turned into tools or utensils, and even burnt as fuel (Mulville 2002). Moreover a lack of harpoons or other tools to catch cetaceans suggest that these animals were stranded or very occasional catches rather than actively hunted (Mulville 2002).

Nordic occupation of the northern and western islands of Scotland in the early middle ages was particularly accompanied by marine mammal consumption and utilisation of stranded and hunted animals (Lindquist 1995) with remains of several cetacean species being found in Nordic sites in the Western Isles dating from the 9th century (Sharples 1997) to the 13th century (Brennand, Parker Pearson & Smith 1998). For example, on South Uist remains of pilot whale, bottlenose whale, killer whale, minke whale, sperm whale and even blue whale artefacts have been found at Norse archaeological sites (Mulville 2002). The larger number, diversity and probably age (many bones from young animals have been found) suggest that there may have been active hunting for cetaceans, although again there is no archaeological evidence of harpoons, nor any substantive evidence (from cuts on bones) of butchering cetaceans for meat (Mulville 2002).

In the northern and western Isles of Scotland, Norwegian laws on whale ownership and whaling held sway until at least 1611 (Ryder 1988). For example the

Gulathing (mid 11thC) a law imported into Orkney presumably from Norway, has sections dealing with stranded whale ownership and distribution (Szabo 2005). In mediaeval Britain (early 14th Century) cetaceans were made '*Fishes Royale*' by Edward III and any stranded cetaceans became property of the crown (Fraser 1977). A similar royal prerogative extended to Scotland, from at least 1603, but likely earlier (Erskine 1895). Despite this, local, subsistence, cetacean consumption continued in this region until at least the 18th Century as evidenced by this statement below:

"...about one hundred and sixty little whales ran themselves ashore on the island of Tiree, and the natives did eat them all" (Martin 1716).

Animals were also driven to the shore (Martin 1716) in a drive fishery akin to those seen today in the Faeroe Islands. Similar drive fisheries were conducted in the western and northern islands of Scotland until the early 20th century (Evans 1996).

CETACEANS AND SCOTTISH CULTURE

Cetaceans have been culturally significant in Scotland since at least the Iron Age, evidenced by carvings on standing stones that are believed to portray dolphins (Hicks 1996). This so-called "Pietish beast", appears on 44 stones carved between 300 and 842AD. Macleod & Wilson (2001) took the issue one step further and suggested that the Pietish beast might represent a beaked whale. The distribution of these stones certainly coincides with the present day distribution of bottlenose dolphins in eastern Scotland being found in areas adjacent to the Moray Firth and along the coast of northeastern Scotland to Aberdeen.

The famous Scotland-dwelling Saint Columba is said to have warned monks travelling from the Isle of Iona to the Isle of Tiree of a "monster of the deep", which turned out to be "a whale of extraordinary size, which rose like a mountain above the water, its jaws open to show an array of teeth" (Sharpe 1995). This is not the

only link between one of Scotland's most famous religious figures and cetaceans, it's been suggested that due to a mistranslation the famous first recorded sighting of the Loch Ness monster (much vaunted by the Scottish tourist board), by said Saint may actually have been an encounter with a whale near the Moray Firth (Parsons 2004).

Folklore from the middle ages describes a sea unicorn from Scottish waters, the *Biasd na Srogaig* or beast with the lowering horn, which is most likely to have been sightings of narwhals, which could have ranged into Scottish waters during the cooler climates of the middle ages and renaissance (Parsons 2004). The unicorn was the Royal device of the Scottish kings since Robert III and it appears on the Scottish Royal crest (two unicorns originally, then one of the unicorns was replaced by a lion when James VI of Scotland inherited the English crown). Likewise the unicorn (and a Shetland pony) appears in the coat of arms of Shetland. It's been suggested that this heraldic device was influenced by Scotland's connection to narwhals (Buczaki 2002; Parsons 2004), and thus Scotland's cultural link to cetaceans is an important, if largely forgotten, one.

COMMERCIAL WHALING

Commercial whaling started in Scotland in Aberdeen in 1753, expanding to Dundee, Peterhead, Fraserburgh and Banff, on the east coast (O' Dell & Walton 1962). By 1820 there were 15 whaling vessels, but the whaling fleet then declined with only two vessels in 1838 (O' Dell & Walton 1962). These whaling operations were primarily to Arctic waters to pursue bowhead whales (Watson 2003). In 1882 a risky expedition was launched from Dundee to investigate whaling potential in Antarctica, an expedition that not only discovered Dundee Island (63°30'S 055°55'W), but also opened the possibilities of whaling in this region, although any increased industry was short lived as whaling from Dundee ended in 1912 (Watson 2003).

In 1903, coastal whaling stations opened in Scotland itself on Harris and the Shetland Isles – these stations caught cetaceans from Scottish waters and operated until 1925. The Harris station was Norwegian owned until 1922, then purchased by Lord Leverhulme

"...partly to provide employment, but also because he suspected that the Norwegians were deliberately contaminating the herring-ground with whale offal to drive the herring to Norway." (Page 219 in Nicolson 1960)

The Harris station closed shortly after Leverhulme's death in 1925. The majority of the whale meat landed in Scotland was exported to Norway, although some was used as animal feed and fertilizer, and some was intended for export to Africa - there was no local consumption. The whale oil had been intended for soap production. The Harris station briefly reopened

between 1950 & 1951, but commercial whaling from Scottish shores ceased after that. However, over 8,000 animals, from 7 species, were harvested from Scottish waters during this whaling period (Table 1; Thompson 1928; Brown 1976).

Species	Number taken
blue whales	401
fin whales	6074
right whales	100
humpback whales	70
sei whales	2214
sperm whales	96
northern bottlenose whales	26

Table 1. Cetaceans taken in Scottish whaling operations (Thompson 1928; Brown 1976).

TODAY – MARINE MAMMAL TOURISM

Today, Scottish cetaceans are still an economic resource, albeit they are no longer killed – via whale watching. The main whale watching areas are currently western Scotland, especially the Isle of Mull and the Small Isles, Inverness and the Moray Firth and the Orkney and Shetland Islands. Target species are predominantly bottlenose dolphins, minke whales and harbour porpoises (Hoyt 2001; Parsons et al. 2003; Warburton et al. 2001). In 2000, in a survey marine wildlife tour operators, 47% surveyed consider whale-watching to be important to local economies (Warburton et al. 2001).

It was estimated that in 2000 the Scottish cetacean tourism was worth at least £10.7 million (US\$18 million) (Warburton et al. 2001; Parsons et al. 2003), of £7.8 which million was from the West Coast of Scotland alone.⁴ Moreover, in some remote coastal areas, cetacean-related tourism may account for as much as 12% of the area's total tourism income which is substantial when one bears in mind that tourism is Scotland's number one industry, is a major employer in rural areas particular in rural areas, and thus an important economic activity in these marginal regions in particular (Parsons et al. 2003).

More recent figures for the total value of the Scottish cetacean tourism industry as a whole are not available, but in the Moray Firth, on the east coast of Scotland, the value of dolphin-watching has increased

⁴ For comparison, at the time of the study, Norwegian commercial whaling worth \$6 million (Toolis 2001) and that value incorporated heavy subsidising by the Norwegian government.

substantially over the past decade: in 1998 Hoyt (2001) estimated that in total cetacean tourism in the Moray Firth attracted generated £0.48 million from trip expenditure and £2.34 million in total expenditure (when one includes expenditure on accommodation etc.); but a more recent study from 2009 (albeit using a different methodology) estimated that total direct expenditures related to the dolphin population in the Moray firth were at least £10.4 million (Davies et al. 2010). One would assume that over the past decade, the value of cetacean tourism has generally increased across Scotland, not just in the Moray Firth.

The whale watching industry is generally considered to be economically viable in the long-term (Woods-Ballard et al. 2003), appears to provide employment particularly for those working in the declining sectors of farming and fishing (Woods-Ballard et al. 2003) and the industry could have considerable potential for further development (Howard & Parsons 2006a) if developed responsibly. Although there are some concerns, most whale watching operators in Scotland seem to be accepting of the need to follow whale watching guidelines or codes of conduct (Parsons & Woods-Ballard 2003). In fact, it is probably in the best interests of whale watching operators to be as responsible and environmentally sustainable as possible as whale watching tourists tend to be environmentally motivated, displaying a high degree of environmental participation (Rawles & Parsons 2004).

Surveys in Scotland's main cities of Glasgow and Edinburgh, members of the public seemed to be aware of the opportunities for whale watching in Scotland, especially in areas such as the Moray Firth (Howard & Parsons 2006a). This high level of awareness is remarkable when one considers that the first commercial Scottish whale watching trip was in 1989, and with only one commercial operator in 1994 (Hoyt 2001; Parsons et al. 2003). Part of the recent surge in awareness of the whale watching industry may be in part due to TV nature programmes (such as *Springwatch* and *Countryfile*) that frequently feature whale watching and cetaceans, and the marketing efforts of new operator associations such as *Wild Scotland* (<http://www.wild-scotland.org.uk/>).

PUBLIC AWARENESS OF CETACEANS

There have been several studies in Scotland to ascertain public awareness of cetaceans and their conservation. For example, Scott & Parsons (2004) interviewed members of the public in southwestern Scotland finding that few people were aware of the diversity of cetacean species in the waters of this region (24 species; Shrimpton & Parsons 2000), although over twice as many gave the correct answer in rural regions as opposed to urban areas (4.4% vs. 1.9% in rural areas and cities, respectively; Scott & Parsons 2004). When asked if specific species occurred in Scottish waters, members of the public fared better with 56.7% being aware of bottlenose dolphins, 50% harbour porpoises, but only 22.6% for killer whales, 14.7% for Risso's

dolphins and only 39.3% knew of the minke whale, the most common baleen whale species in Scottish waters (Scott & Parsons 2004). Younger participants (18-30), residents of the Isles of Mull and Islay (whale watching areas), people who took part in marine activities and members of environmental groups scored significantly higher than other participants (Scott & Parsons 2004). When asked to identify photographs of common species, only 17.5% could identify a harbour porpoise (19% bottlenose dolphins; 10.7% minke whale and 7.1% common dolphin; Scott and Parsons 2004). Those sectors of the public who were more aware of the occurrence of cetaceans also could identify them, but city dwellers and interestingly workers in fishing, tourism and education sectors were less able to identify species (Scott & Parsons 2004).

AWARENESS OF CONSERVATION ISSUES

With respect to threats to cetaceans in Scotland, members of the public tended to be more concerned about impacts of factors such as sewage pollution, marine litter, over-fishing and oil spills, i.e. relatively visible issues (Scott & Parsons 2005; Howard & Parsons 2006b). A survey of cetacean experts was also conducted to ground truth the public perceptions and it was found that these experts were more concerned about climate change, whale-watching, military activities and dredging (i.e. issues mostly relating to noise and disturbance) than the general public, but they were less concerned about oil spills and sewage pollution (Howard & Parsons 2006b). In general, the majority of the public questioned who had an opinion, stated that they did not think cetaceans were sufficiently protected in Scotland (Table 2), although there was a high proportion of those from cities who stated that they didn't know whether they did or not (Scott & Parsons 2005; Howard & Parsons 2006b).

How well are Cetaceans protected?	Percentage (South-west)	Percentage (Major cities)
Don't Know	25.8 %	60.0 %
Over-protected	0.4 %	0.0 %
Sufficiently protected	28.2 %	7.0 %
Not sufficiently protected	45.6 %	33.0 %

Table 2. Public attitudes to how well cetaceans are protected in Scotland (Scott & Parsons 2005; Howard & Parsons 2006b).

However, when asked whether laws should be introduced specifically for the conservation of

cetaceans in Scotland (e.g., a Cetacean Protection Act for Scotland): 80% supported such a piece of legislation. Moreover, when asked if a politician were to introduce such a law would it make them see the politician more favourably 40% said yes it would make them view that politician in a better light (26% were unsure; Howard & Parsons 2006b). It is interesting to note that after these surveys were publicized, for the first time, all of the major political parties specifically mentioned cetacean conservation in their next election manifestos.

PUBLIC ATTITUDES TO WHALING

Going from a nation which conducted whaling historically and also as a commercially for nearly two hundred years, the public seems to now be greatly opposed to this activity, with a survey conducted in 2001 finding that 96.4% of the public were opposed to whaling (75% strongly opposed; 2.4% did not know; Scott & Parsons 2005). Moreover, 79% of whale-watchers in Scotland stated in a survey that they would boycott visiting a country that conducted hunts for cetaceans, such as Iceland, Japan or Norway (Parsons & Rawles 2003). This illustrates a dramatic sea change in attitudes to cetaceans nearly fifty years after whaling stopped in Scottish waters, arguably because of the people of Scotland appreciate the cultural and economic value of living cetaceans in their waters.

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